## CLAIMS

1. A process for deacidifying single strength juice including not from concentrate (NFC) juice using an ion-exchange column having a lower volume portion filled with acid-adsorbing resin beads and having an upper volume portion within which the resin beads are not present, the lower volume portion having an exit port, a first inlet port opening into the upper volume portion at an upper location spaced a given distance above the resin beads, a second inlet port opening into the upper volume portion at a lower location which is spaced a distance above the resin beads which is less than said given distance, the process comprising:

introducing water into the resin column;

draining a fraction of the water from the column through the exit port to create a head space in the column above the resin beads;

introducing untreated single strength juice which meets SOI criteria for the single strength juice into the resin column through the second inlet port and into the head space;

introducing untreated single strength juice which meets SOI criteria for the single strength juice into the resin column through the first inlet port;

draining water through the exit port to provide an outflowing treated liquid and continuing the draining until

the outflowing treated liquid meets or exceeds the SOI criteria for the single strength juice;

continuing to introduce untreated single strength juice through the first inlet port and directing the outflowing treated liquid to production of deacidified single strength juice;

removing treated juice from the resin column so as to create a head space in the column;

introducing water through the second inlet port and into the head space in the column; and

introducing water through the first inlet port passing liquid through the exit port to provide an outflowing liquid, and continuing the passing until the outflowing liquid no longer meets the SOI criteria for the single strength juice, at which time treated liquid is no longer directed to production.

2. The process of claim 1 wherein the untreated single strength juice is introduced into the resin column through the second inlet port until the head space is filled with untreated single strength juice.

3. The process of claim 1 wherein the untreated single strength juice is introduced into the resin column through the

first inlet port simultaneously with the draining of the water through the exit port.

4. The process of claim 1 wherein the single strength juice is NFC citrus juice and the outflowing liquid is first directed to production of deacidified NFC citrus juice when the brix of the liquid flowing through the exit port exceeds a minimum brix value component of the SOI criteria for the single strength NFC juice.

5. The process of claim 1 wherein the water is introduced into the resin column through the second inlet port until the head space in the column is filled.

6. The process of claim 1 wherein the water is introduced through the first inlet port simultaneously with the passing of liquid through the exit port.

7. The process of claim 1 further comprising recovering the treated liquid of the draining procedure for further processing into juice products which need not meet SOI criteria for the single strength juice.

8. The process of claim 1 further comprising recovering the treated liquid from the passing procedure for further

processing into juice products which need not meet SOI criteria for the single strength juice.

9. The process of claim 1 wherein the continuing procedure ceases when the outflowing treated liquid has a pH which exceeds a predetermined value.

10. The process of claim 9 wherein the predetermined value is 4.5.

11. The process of claim 9 wherein the pH predetermined value is 4.3.

12. A process for deacidifying single strength juice including not from concentrate (NFC) juice using an ion-exchange column having a lower volume portion filled with acid-adsorbing resin beads and having an upper volume portion within which the resin beads are not present, the lower volume portion having an exit port, the process comprising:

introducing water into the resin column;

draining a fraction of the water from the column through the exit port to create a head space in the column above the resin beads;

introducing into the head space untreated single strength juice which meets SOI criteria for the single strength juice;

draining water through the exit port to provide an outflowing treated liquid and continuing the draining until the outflowing treated liquid meets or exceeds the SOI criteria for the single strength juice;

continuing to introduce untreated single strength juice and directing treated liquid to production of deacidified single strength juice;

removing treated single strength juice from the resin column so as to create a head space in the column; and

introducing water into the head space in the column, passing liquid through the exit port to provide an outflowing liquid, and continuing the passing until the outflowing liquid no longer meets the SOI criteria for the single strength juice, at which time treated liquid is no longer directed to production.

13. The process of claim 12 wherein the untreated single strength juice is introduced into the resin column until the head space is filled with untreated single strength juice.

14. The process of claim 12 wherein the untreated single strength juice is introduced into the resin column simultaneously with the draining of the water through the exit port.

15. The process of claim 12 wherein the single strength juice is NFC orange juice and the outflowing liquid is first directed to production of deacidified NFC orange juice when the brix of the liquid flowing through the exit port exceeds a minimum brix value criteria of the SOI for NFC orange juice.

16. The process of claim 12 wherein the water is introduced into the resin column until the head space in the column is filled.

17. The process of claim 12 wherein the water is introduced into the column simultaneously with the passing of liquid through the exit port.

18. The process of claim 12 further comprising recovering the treated liquids of the draining procedure for further processing into juice products which need not meet SOI criteria of single strength juice.

19. The process of claim 12 further comprising recovering the treated liquid from the passing procedure for further processing into juice products which need not meet SOI criteria of single strength juice.

20. The process of claim 12 wherein the continuing procedure ceases when the outflowing treated liquid has an acidity which exceeds a predetermined acidity value.

21. The process of claim 20 wherein the predetermined acidity value is a titratable acidity of about 0.6 weight percent.

22. A process for making a low-acid single strength juice including not from concentrate (NFC) juice product, comprising:

providing an initial single strength juice flow having suspended solids and a known brix;

diverting from the initial single strength juice flow a first portion of the single strength juice from a second portion of the single strength juice;

separating out the suspended solids from the first portion of the single strength juice to provide a solids-reduced single strength juice having not greater than about 3 volume percent suspended solids based upon the total volume of the solids-reduced single strength juice;

providing an ion-exchange column having a lower volume portion filled with ion-adsorbing resin beads and having an upper volume portion within which the resin beads are not present, the lower volume portion having an exit port, a first

inlet port opening into the upper volume portion at an upper location spaced a given distance above the resin beads, and a second inlet port opening into the upper volume portion at a lower location which is spaced a distance above the resin beads which is less than said given distance;

introducing water into the resin column;

draining a fraction of the water from the column through the exit port to create a head space in the column above the resin beads;

introducing the solids-reduced single strength juice into the resin column through the second inlet port and into the head space;

introducing the solids-reduced single strength juice into the resin column through the first inlet port;

draining water through the exit port until the brix of the outflowing treated liquid exceeds a pre-determined minimum value relative to the brix of the initial citrus juice flow;

continuing to introduce solids-reduced single strength juice through the first inlet port and directing treated liquid to production of deacidified single strength juice;

removing treated single strength NFC juice from the resin column so as to create a head space in the column;

introducing water through the second inlet port and into the head space in the column;

introducing water through the first inlet port and passing liquid through the exit port until the brix of the outflowing liquid drops below a pre-determined value, at which time treated liquid is no longer directed to production; and

combining the deacidified single strength juice from the ion-exchange column with said second portion of the single strength juice flow and with the separated suspended solids to achieve a final blend, which is a low-acid single strength juice.

23. The process of claim 22 further comprising adding a portion of the initial single strength juice flow to the deacidified single strength juice immediately after deacidification to lower the pH of the deacidified single strength juice to a value that discourages microbial activity.

24. The process of claim 22 further comprising cooling the initial single strength juice flow to a temperature of not greater than about 45°F and maintaining the single strength juice at or below this temperature throughout the process, except during pasteurization or enzyme deactivation, if same is practiced during the process.

25. The process of claim 22 wherein the separating procedure reduces the suspended solids in the solids-reduced

single strength juice to less than about one volume percent, based on the total volume of the solids-reduced single strength juice.

26. The process of claim 22 wherein the continuing procedure is maintained until such time as the acidity of the treated liquid exceeds a predetermined value.

27. A process for making a low-acid single strength juice including not from concentrate NFC juice product, comprising:

providing an initial single strength juice flow having suspended solids and a known standard of identity (SOI);

diverting from the initial single strength juice flow a first portion of the juice from a second portion of the juice;

separating out the suspended solids from said first portion juice to provide a solids-reduced single strength juice having not greater than about 3 volume percent suspended solids based upon the total volume of the solids-reduced single strength juice;

providing an ion-exchange column having a lower volume portion filled with ion-adsorbing resin beads and having an upper volume portion within which the resin beads are not present, the lower volume portion having an exit port;

introducing water into the resin column;

draining a fraction of the water from the column through the exit port to create a head space in the column above the resin beads;

introducing the solids-reduced single strength juice into the resin column into the head space;

draining water through the exit port until the SOI of the outflowing treated liquid meets or exceeds the known SOI of the single strength juice;

continuing to introduce solids-reduced juice and directing treated liquid to production of deacidified single strength juice;

removing treated single strength juice from the resin column so as to create a head space in the column;

introducing water into the head space in the column and passing liquid through the exit port until the outflowing liquid has an SOI which does not meet or exceed the known SOI, at which time treated liquid is no longer directed to production; and

combining the deacidified single strength juice from the ion-exchange column with said second portion juice flow and with the separated suspended solids to achieve a final blend, which is a low-acid single strength juice.

28. The process of claim 27 further comprising adding a portion of the initial single strength juice flow to the

deacidified single strength juice immediately after deacidification to lower the pH of the deacidified single strength juice to a value that discourages microbial activity.

29. The process of claim 27 further comprising cooling the initial single strength juice flow to a temperature of not greater than about 45°F and maintaining the single strength juice at or below this temperature throughout the process, except during pasteurization or enzyme deacidification, if same is practiced during the process.

30. The process of claim 27 wherein the separating procedure reduces the suspended solids in the solids-reduced single strength juice to less than about one volume percent, based on the total volume of the solids-reduced single strength juice.

31. A low-acid not from concentrate (NFC) juice prepared according to the process of claim 22.

32. The low-acid NFC juice according to claim 31, said juice being a low-acid NFC orange juice having a titratable acidity of not greater than about 0.6 weight percent.

33. The low-acid NFC juice according to claim 31, said juice being a low-acid citrus juice having an acidity lower than that of the initial single strength juice flow.

34. A low-acid not from concentrate (NFC) juice prepared according to the process of claim 27.

35. The low-acid NFC juice according to claim 34, said juice being a low-acid NFC orange juice having a titratable acidity of not greater than about 0.6 weight percent.

36. The low-acid NFC juice according to claim 34, said juice being a low-acid citrus juice having an acidity lower than that of the initial single strength juice flow.